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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GARY K. LODA and RICHARD C. MILLER

Appeal 2009-001138
Application 09/964,785
Technology Center 1700

Decided: March 25, 2010

Before MICHAEL P. COLAIANNI, PETER F. KRATZ, and
MARK NAGUMO, *Administrative Patent Judges*.

KRATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 34, 35, 47, 48, and 51-66. We have jurisdiction pursuant to 35 U.S.C. § 6.

Appellants' claimed invention is directed to a method and system for irradiating opposite sides of articles using a plurality of radiation sources disposed on opposite sides of a load transport member that transports the article along a path past the radiation sources. Appellants' method includes positioning a radiation reducing member in a radiation path between a radiation source and the article to be irradiated or positioning the member out of the radiation path based on a determination made as to whether that article will receive a cumulative amount of radiation between a first and second limit. Appellants' system includes structure for carrying out such a method including a radiation reducing member and actuator therefore in addition to the requisite load transport member and radiation sources.

Claims 34 and 47 are illustrative and reproduced below:

34. A method of irradiating an article using a plurality of radiation sources disposed on opposite sides of a load transport member configured to transport the article along a transport path past the plurality of radiation sources, including the steps of:

determining whether the article will receive a cumulative amount of radiation between a first limit and a second limit;

positioning a radiation reducing member either into or out of a radiation path of a radiation source based on the determination of cumulative radiation; and

directing radiation to the article from radiation sources disposed on opposite sides of the load transport member.

47. A system for irradiating an article, comprising

a load transport member configured to transport a plurality of articles through the system in a transport path;

at least two radiation sources disposed on opposite sides of the load transport member, wherein each radiation source is configured to direct a radiation stream toward the transport path for irradiating the article;

a microprocessor configured to determine whether a cumulative amount of radiation that will be applied by the radiation sources to the article will be between a first limit and a second limit, wherein the second limit is greater than the first limit;

a radiation reducing member; and

a radiation reducing member actuator that is configured to move the radiation reducing member between a first position wherein the radiation reducing member is disposed outside of the radiation stream of at least one of the radiation sources and a second position wherein the radiation reducing member is disposed within the radiation stream and between the radiation source and the transport path.

The Examiner relies on the following prior art references as evidence in rejecting the appealed claims:

| | | |
|----------|-----------------|---------------|
| Bergeret | 4,852,138 | Jul. 25, 1989 |
| Allen | US 6,492,645 B1 | Dec. 10, 2002 |
| Kotler | US 6,504,898 B1 | Jan. 7, 2003 |

The Examiner maintains the following ground of rejection:

Claims 34, 35, 47, 48, and 51-66 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kotler in view of Bergeret or Allen.
We reverse.

Kotler discloses a method and apparatus for irradiating a product or stack of products with a relatively evenly distributed radiation dosage throughout the product using a turntable for rotating the item(s) to be irradiated during radiation exposure, a radiation source, an adjustable collimator, and a specified control system therefor (col. 3, l. 40 - col. 5, l. 20; col. 12, ll. 61-67). Kotler discloses that the turntable may be moved “toward

or away from the adjustable collimator or the turntable may be moved laterally, so that an axis of rotation of the product on the turntable is offset from the X-ray beam axis" (col. 5, ll. 2-5). Kotler identifies a dose uniformity ratio (DUR) as the ratio of the maximum radiation dosage to the minimum radiation dosage received at some location within a product or product stack in a given treatment with low ratios of about 1 indicating a high level of dosage uniformity throughout the product (col. 7, ll. 22-45). Kotler teaches that the DUR is low within a product stack using their process and system, which employs an adjustable collimator for attenuating the radiation and shaping the radiation beam that is passed, a rotating turntable for holding the product stack, and a control system for modulating parameters of the radiation system and for delivering an appropriate radiation dose within the product stack (col. 4, ll. 28-51).

Bergeret is directed to an irradiation cell conveyor system, which conveyor system transports goods to be irradiated on conveyors past a radiation source panel (abstract). In so doing, Bergeret discloses the use of a plurality of irradiator conveyor lines that are parallel to one or more radiation source panels for irradiating parcels of a variety of dimensions as they are carried by the conveyor lines (*id.*, col. 5, ll. 18-31 and 40-44; Fig. 2).

Allen discloses or suggests a system and method for irradiating products, such as food and medical instruments, while they are carried on a process conveyor past two radiation sources supplying radiation to the products in opposite directions while the products are conveyed in a direction substantially normal to the paths of the radiation applied to the transported items (col. 1, l. 56 - col. 2, l. 5 and col. 5, ll. 35-63; Figs. 1 and 4).

In asserting the obviousness of the appealed claims, the Examiner opines that:

[i]t would have been well within the purview of one of ordinary skill in the art to substitute plural sources for irradiation and the conveyed system, as taught in Bergeret et al. and Allen et al., in the system of Kotler et al., because it would allow for the simultaneous treatment of a larger number of products, including those with non-uniform geometries, while maintaining the dose control functions with adjustable radiation. (Ans. 7-8).

Appellants note that “[t]he Examiner combines Bergeret and Allen with Kotler because Kotler fails to disclose utilizing a plurality of sources and a conveyor system ...” (App. Br. 4). Appellants argue, in part, that:

modifying Kotler by replacing the turntable with a conveyor would render the device of Kotler unsatisfactory for its intended purpose. Kotler teaches away from the proposed modification because, as Kotler clearly illustrates, the desired radiation profile is achieved by employing an adjustable collimator in conjunction with a turntable. Specifically, in Kotler it is the inversion of the radiation profiles achieved between the scenario depicted in Figures 2(a) and 2(b) and the scenario depicted in Figures 2(c) and 2(d) that instigates the combination of the turntable and adjustable collimator of the Kotler device. It is the ability to adjust the shape of the radiation with the collimator in combination with the turntable that allows the system to achieve the scenario illustrated in Figures 2(e) and 2(f). (App. Br. 12).

Thus, Appellants urge that the teachings of Kotler are contrary to the Examiner’s suggested modification and that combining the applied references in the manner proposed by the Examiner is not supported by the teachings of the cited prior art.

Consequently, a principal issue before us is:

Has the Examiner presented a rational basis for the proposed use of plural radiation sources and the conveyed systems taught by Bergeret or Allen as replacement components for use in Kotler's irradiation method and system, which uses a turntable and an adjustable collimator with a single radiation source for obtaining relatively low DUR products?

We answer this question in the negative.

The Examiner bears the initial burden, on review of prior art or on any other ground, of presenting a prima facie case of non-patentability. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). On appeal to this Board, Appellants may show that the Examiner erred in rejecting the claims via written argument presented in the Appeal Brief. *See* 37 C.F.R. § 41.37(c)(1)(vii).

In the face of Appellants' arguments contesting the propriety of the Examiner's proposed modification of Kotler, the Examiner does not explain with any particularity how a substitution of specific conveyance equipment and plural radiation sources from either of Bergeret or Allen would have been combined with any remaining pieces of the system of Kotler by an ordinarily skilled artisan so as to result in subject matter, as claimed, much less articulate with persuasive detail why an ordinarily skilled artisan would have been led to do so. For example, the Examiner suggests that the turntable of Kotler may or may not be replaced by the proposed substitution involving Bergeret (Ans. 8); however, the Examiner does not articulate what pieces of equipment from Kotler would remain with respect to each of the suggested substitution options and which pieces of equipment from Bergeret would be part of each of the alternatively proposed modifications. Nor does the Examiner explain how the modified apparatus would perform the functions required by Kotler.

On this record, the Examiner's basis for the rejection falls short of identifying a persuasive rationale that would have led an ordinarily skilled artisan to combine selected conveyance and multiple radiation source features taught by Bergeret or Allen in a modification of Kotler's system and method so as to result in a system or process that the appealed claims embrace. After all, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). In other words, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR.*, 550 U.S. at 418.

ORDER

On this record, the Examiner's decision to reject claims 34, 35, 47, 48, and 51-66 under 35 U.S.C. § 103(a) as being unpatentable over Kotler in view of Bergeret or Allen is reversed.

REVERSED

Appeal 2009-001138
Application 09/964,785

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